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Description of five new subspecies of *Bebearia* Hemming, 1960 and further notes on the genus (Lepidoptera: Nymphalidae, Limenetidinae, Adolaidini)

L. F. Mendes, A. Bivar-de-Sousa & L. F. Lopes

Abstract

Samples of Lepidoptera of genus *Bebearia* Hemming, 1960 deposited in their majority in the MUHNAC collection are studied; they proceed especially from Guinea-Bissau, Angola and Mozambique. Five new subspecies are described, three from the northern Angola and one from the north-eastern Mozambique belong to the “group *mardania*”; a further one, from the north-western Angola, includes the “group *sophus*”.

KEY WORDS: Lepidoptera, Nymphalidae, Limenetidinae, Adolaidini, *Bebearia*, new subspecies, Angola, Mozambique.

Descripción de cinco subespecies nuevas de *Bebearia* Hemming, 1960 y otras notas sobre el género (Lepidoptera: Nymphalidae, Limenetidinae, Adolaidini)

Resumen

Se estudian los muestreos de Lepidoptera del género *Bebearia* Hemming, 1960 depositados en su mayoría en la colección del MUHNAC; provienen en especial de Guinea-Bissau, Angola y Mozambique. Se describen cinco subespecies nuevas, tres del norte de Angola y otra del nordeste de Mozambique pertenecientes al “grupo *mardania*”; otra del noroeste de Angola, incluido el “grupo *sophus*”.

PALABRAS CLAVE: Lepidoptera, Nymphalidae, Limenetidinae, Adolaidini, *Bebearia*, nuevas subespecies, Angola, Mozambique.

Descrição de cinco subespécies novas de *Bebearia* Hemming, 1960 e outras notas sobre o género (Lepidoptera: Nymphalidae, Limenetidinae, Adolaidini)

Resumo

Estudam-se as amostras de Lepidoptera do género *Bebearia* Hemming, 1960 na sua maioria em depósito na colecção do MUHNAC; provêm em especial da Guiné-Bissau, Angola e Moçambique. Descrevem-se cinco subespécies novas: três do norte de Angola e uma do nordeste de Moçambique pertencem ao “grupo *mardania*”; uma outra, do noroeste de Angola, integra o “grupo *sophus*”.

PALAVRAS CHAVE: Lepidoptera, Nymphalidae, Limenetidinae, Adolaidini, *Bebearia*, subespécies novas, Angola, Moçambique.

Introduction

As pointed HECQ (2000a, b), D’ABRERA (2004) and LARSEN (2005), the exclusively Afrotropical genus *Bebearia* Hemming, 1960, currently with more than one hundred described

species/subspecies, is close to *Euriphene* Boisduval, 1847 and to *Euphaedra* Hübner, [1819], from which it may be distinguished mainly by details of the forewing venation and, in the great majority of the cases, by the clear sexual dimorphism; the different colour of the underside of the labial palps (gray in *Bebearia*, orange in *Euphaedra*) and the distinct cell spots are considered by LARSEN (2005) as obviously not strong characters though they can be useful in what most of the representatives of these genera are concerned. A detailed study of the wings' shape and pattern, and of the male genitalia morphology are fundamental for the correct diagnosis of the species, as stressed also HANCOCK (1992) and HOLMES (2001).

Present contribution deals with the study of *Bebearia* specimens mainly from Guinea-Bissau, Angola and Mozambique, while a few further samples from other geographical origins are also seen. Previous identification of the taxa registered for those countries are also reported and discussed, and a few corrections are presented.

Five new subspecies, four from the northern Angola and one other from the north-eastern coastal Mozambique are described and notes are presented on the remaining studied taxa. Four among the new taxa belong to the "group *mardania*", which wings verso is crossed by a darker band prolonged from the forewing apex to the hindwing tornus and which caterpillars feed on palms (Monocotyledons, Arecaceae); the fifth one is a subspecies of *B. sophus*, the only known representative of the "group *sophus*", characterized by the strongly falcate forewings, which males are brownish with darker round spots and with an usually hill-defined subapical lighter band, while females' recto is mostly bluish or greenish and its subapical band is as a rule yellow (rarely whitish) and more contrasted; the forewing verso line is in this group arched from the inner margin apex to its middle, and in the known subspecies, the caterpillars feed on *Landolphia* (Apocynaceae) and on *Chrysophyllum* (Sapotaceae).

Methodologies

The studied imagos all dried and pinned and originally dispersed by several Portuguese collections, are now part of the National Natural History and Science Museum, Lisbon University (MUHNAC), of the Natural History Museum, Oporto University (NHMUP) and of the second co-author personal collection (BS, mostly obtained by him). Holotype and paratypes of each one of the newly described taxon whatever the collection they were originally integrated, were deposited in institutional collections, namely that of the MUHNAC, with the exception of one paratype female that integrates the MHMUP. Opposite to what is recommended by the last issues of the ICZN but taking into account that most of the *Bebearia* species show a quite conspicuous sexual dimorphism, we opted for designate an paratype female among the paratypes for the newly described taxa. The original labels are transcribed and previous identifications, even if incorrect, are reported.

The following abbreviations will appear along the text: AF: Collection of A. Figueira, obtained by himself, donated to the NHMUP with the exception of a few duplicates offered to BS – then, both registration numbers maintained, as AF and BS – and to the MUHNAC; AS: Specimens collected by A. Serrano and R. Capela and offered to BS; C: Central; CAR: Central African Republic; CDR: Democratic Republic of Congo, previously Zaire, the former Belgian Congo; Congo: The Congo Republic, formerly the Congo Popular Republic, before that, the French Congo; CZ: Collection of the extinct Instituto de Investigação Científica Tropical / Centro de Zoologia, now integrated in the MUHNAC, the original registration numbers maintained. E: East, eastern; FW: Forewing; FWR: Recto of the forewing; HW: Hindwing; HWR: Recto of the hindwing; HWV: Verso of the hindwing; LC: Specimens collected by Luna de Carvalho, bequeath to the CZ - both registration numbers maintained (LC and CZ); N: North, northern; NP: National Park; NW: North-western; n.: locality number; nn: Devoid of registration number; PC: Collection of Passos de Carvalho, obtained by him especially in Angola, offered to the MUHNAC; PG: Collection of Pessoa Guerreiro, gathered by himself, previously in the CZ; R: Recto (dorsal) surface; RCI: Republic of Ivory Coast; S: South, southern; SE: South-eastern; SFA: Collection assigned as deposited in the "Serviços Florestais de Angola" (the Angolan

Forest Service – Cabinda ? – never seen, currently not localizable if still existent); SW: South-western; V: Verso (ventral) surface; W: West, western; WL: Length of the FW.

The specimens' WL was measured with an etalon clipper along the FW costa, when possible in the left wing, from its apex to the wing' insertion in the thorax.

Most of the Angolan localities from where samples are studied, were listed by MENDES *et al.* (2013); the following ones, all close to the Calulo village in the Cuanza Sul Province and not previously considered, are: Aldeia Catembo (10°00'S, 14°49'E); Cabuta (09°54'S, 14°54'E); Fazenda Klein (10°02'S, 14°54'E); and Fazenda Monte Café (09°59'S, 14°50'E); they all are high between 900 and 1,100 m above sea level.

Coordinates for the Mozambique collecting localities are based on the JMGIC (1946) maps: those concerning the samples now studied are Nacala, Nampula Province (14°03'S; 40°35'E; <50 m) and Mata do Nhangau, Sofala Province (19°44'S; 34°57'E; < 50 m); remaining ones, concerning bibliographic data and all in the Sofala Province are: Amatongas (19°11'S, 33°46'E, 400 m); Dondo (19°37'S, 34°45'E, < 50 m); and Maronga forest (19°51'S, 32°49'E, 1,445 m – S from the Chimanimani NP).

Province and UTM coordinates of the localities in Guinea-Bissau from where samples were studied, include MENDES *et al.* (2007) and BIVAR-DE-SOUSA *et al.* (2016).

Among the remaining studied specimens, one comes from the Impenetrable Forest, a rain forest sanctuary not far from Kabale, SW Uganda, close to the country borders with Rwanda and with RDC; another was obtained in the Tai NP, Djiburuti, Ivory Coast; and a further one was collected, in a low coastal forest area of the Loango NP, near St. Catherine, Ogooué Maritime Province, Gabon; precise coordinates of these three localities remain unavailable - the specimens from Uganda and Gabon were collected by the senior author.

The male genitalias were dissected under a Wild M5A binocular microscope lightened by a Hund Wetzler optical fiber source, gently boiled in a sodium hydroxide water solution and finally washed in 70% ethanol; for definitive preparations they were mounted in Tendeiro' Liquid (PAGÉS & MONTEYS, 2005: 1028) as it allows the direct passing from ethanol and enables an excellent preservation; after mounting for drying and transparentisation, the definitive slides were maintained in a stove at 40-50° C by 2-5 days before observation and after that, they remained there at least during one more week for complete drying; for their detailed study, a SM-LUX optical microscope with camera lucida was used. The micro-photos were taken with a stereomicroscope camera Leica M-165C, associated with a software LAS v.3.0.11.

Taxonomy

Genus *Bebearia* Hemming, 1960

Subgenus *Apectinaria* Hecq, 1990

Group *tentyris*

Bebearia languida (Schultze, 1920) (Figs 1a-1d, 16)

Euryphura tentyris var. *languida* Schultze, 1920. *Egbe. 2tn. Dt. Zent. Afrika. Exp.*, **1**(14): 724

LT: Angu (Uelle-Distr.), Belg. Kongo, ZAIRE

Material examined: ANGOLA, Cabinda, Buco Zau, 1 ♀, 23-V-1952 (CZ-nn); Surroundings of Cabinda town, 1 ♂, 21-XI-1971 (PG-241). Pathway to Gima Lake, 1 ♀, 12-III-1972 (PG-nn). Uige: Inga, 1 ♂, IX-1964 (BS-15800).

B. languida was described from the Uelle (Zaire) as a variety of *Euryphene tentyris* and it is considered by AURIVILLIUS (1928, as *Euryphene subtentyris*) to range from Sierra Leone to N Angola (first reference to the country) and by D'ABRERA (2004, as *Bebearia tentyris languida*) to fly in N Angola and S and C CDR. HECQ (1994) reports its presence from Equatorial Africa eastwards at least to Uganda but later (HECQ, 2000a, b, as a subspecies of *B. subtentyris*) points only Cameroon to

CDR. ACKERY *et al.* (1995, as *B. tentyris languida*) note again its presence in N Angola, Congo and C CDR, though none precise Angolan locality remains known.

HECQ (2000) and D'ABRERA (2004) reinforce the typical R violaceous or purple shine usually patent on all the male four wings, a feature more conspicuous in the specimen from the Uige than in the one from Cabinda. Meanwhile, BERGER (1981, sub *B. tentyris*) considers that "*les mâles d'un fauve clair, avec léger reflet violet, ont été baptisés subtentyris Strand*". The re-examined samples are in the base of the species most recent reference for Angola (MENDES *et al.*, 2019) and fairly agree with what was previously known. The male from close to the Cabinda town was misidentified by PG as *B. absolon*? and the female from the Gima Lake, as *Catuna crythea* Drury (both handwritten labels, data never published). The male genitalia valves are robust, longer than the uncus, slightly waved and provided with numerous scales in their basal and median part mixed with thin setae (the scales seem absent from their distal third only).

Bebearia absolon absolon (Fabricius, 1793) (Figs 2a-2d, 17)

Papilio absolon Fabricius, 1793. *Ent. Syst.*, **3**(1): 56

LT: GUINEA

Material examined: ANGOLA, Cabinda, Bucu Zau, 1 ♀, 29-VI-1952 (CZ-nn). Cuanza Norte, Salazar, 1 ♀, VIII-1971 (AF-NY665022, BS-nn); Ibid, 2 ♂♂, IV-1972 (BS-14978, 14980); Ibid, 1 ♂, II-1973 (AF-NY665021, BS-nn); Ibid, 1 ♂, V-1973 (AF-NY665020, BS-nn). Uige: Inga, 1 ♂, IX-1964 (BS-15804). Province ?: No locality, 1 ♂, no date (PC-19827).

The species is assigned for Angola by the first time by BACELAR (1958, sub *Euryphene*) upon one unsexed specimen obtained in the Belize river (Cabinda) said to be deposited in the SFA; the Bucu Zau sample confirms *B. a. absolon* presence in this territory and the males from Salazar (currently Dalatando) and from Inga, enlarge its range in Angola to the Cuanza Norte and Uige forests - they all are in the base of the MENDES *et al.* (2019) subspecies reference to the country. It is, further, pointed for Angola by FOX (1968, sub *Euphaedra*, no precise location), while HECQ (2000 a, b) notes it is a pan-African subspecies. Its presence in Angola is not objectively considered by ACKERY *et al.* (1995) who states that the species occurs from Liberia to Uganda and that the nominate subspecies flies from Liberia and RCI to Cameroon and CDR - relatively to this country Mayumbe, Ubangi, Mongala, Uele, Ituri, northern Kivu, Tchopo, Tchuapa, Equateur, Kinshasa, Kasai, Sankuru and Lualaba are assigned, the very same provinces reported by BERGER (1981). The R is typically devoid of violaceous reflexions, though this tint may be exceptionally slightly perceptible (ahead, note on *B. micans*). Relatively to the male genitalia, the valves are longer than the uncus and they show on the basal outer area some scales mixed with thin setae (clearly less numerous, however, than in *B. languida*).

Bebearia absolon entebbiae (Lathy, 1906) (Fig. 3a-3b, 18)

Euryphene entebbiae Lathy, 1906. *Trans. Ent. Soc. Lond.*, **1906**(1): 5, pl. 2, fig. 1

LT: Entebbe, UGANDA

Material examined: UGANDA, Southern Uganda, Bwindi NP, Impenetrable Forest, 1 ♂, 16-VIII-2007 (CZ-5362).

The subspecies was described from Entebbe, Uganda, noticed to occur in East Africa by HECQ (2000a, b) without details, and pointed to the same area by ACKERY *et al.* (1995) and by D'ABRERA (2004). The only studied male is darker and somewhat larger than those of the nominate subspecies just reported from N Angola (WL: 28.6 mm vs. 23.8-27.4 mm); the genitalia is similar to that of the nominate species though no scales could be spot on the valves (rubbed?).

Bebearia micans (Aurivillius, 1898)

Euryphene absolon var. *micans* Aurivillius, 1898. *K. svenska VetenskAkad. Handl.*, **31**(5): 201

LT: Kamerun - Congogebiet, Sassa, ZAIRE

Note: *B. micans* was described from Sassa, in the Bas Uele (CDR), clearly northwards from

Angola, and it was not considered to include the Angolan fauna by most of the authors: AURIVILLIUS (1928, as a subspecies of *Euryphene absolon*), reports Cameroon to CDR; HECQ (2000a, b), adds Nigeria; ACKERY *et al.* (1995) and D'ABRERA (2004) assign also CDR and Cameroon without details while BERGER (1981) states that *B. micans* is no more than a morph of *B. absolon* with a “*très léger reflet violet*”. The only previous reference of *B. micans* for Angola (MENDES *et al.*, 2019) is based, indeed, in the misidentification of 1 ♂ of *B. absolon* that exhibits a R week violaceous shine (specimen AF-NY665020, BS-nn), now re-examined and corrected, which, apart from this characteristic, shares the remaining features with the other studied males of the species collected in Cabinda, Cuanza Norte and Uíge being so, considered to be con-specific with them. Consequently, and according to the present state of knowledge, it must be stated that *B. micans* doesn't occur in Angola.

Bebearia zonara (Butler, 1871) (Figs 4a-4b, 19)

Aterica zonara Butler, 1871. *Proc. Zool. Soc. Lond.*, **1871**: 81

LT: Fantee, Cape Coast, GHANA

Material examined: ANGOLA, Cabinda, Chimbuande Lake, 1 ♂, 21-II-1971 (PG-232). Pathway to Gima Lake, 1 ♂, 12-III-1972 (PG-233), labelled as a ♀. Cuanza Norte, Salazar, 3 ♂♂, IV-1971 (BS-14974, 14976, 14982). Uíge, Inga, 2 ♂♂, IX-1964 (BS-15802, 15803).

The species is reported for Angola only recently (MENDES *et al.*, 2019) with base on the samples detailed above; indeed, none of the previous notes on the *B. zonara* range considers objectively it attains the country: AURIVILLIUS (1928) reports Ghana (as Gold Coast) to Congo, ACKERY *et al.* (1995) Sierra Leone to Cameroon, CDR (Mayumbe, Ubangi, Mongala, Uele, Ituri, Tchopo, Equateur, Cataractes, Kasai, Sankuru and Lualaba - the same provinces detailed by BERGER, 1981, incorrect subsequent spelling as *B. zonaria*) and Uganda (Bwamba and Toro) while D'ABRERA (2004) states Sierra Leone to Cameroon, CDR and W Uganda. After HECQ (2000a, b) it will be a pan-African element. The male valves are clearly shorter and wider than in the previous species and they are almost devoid of scales.

Bebearia oxione squalida Talbot, 1928

Euryphene oxione squalida Talbot, 1928. *Bull. Hill. Mus.*, **2**: 230

LT: Entebbe, UGANDA

Note: According to AURIVILLIUS (1928, sub *Euryphene*), *Bebearia oxione* Hewitson, 1866 occurs from the Old Calabar (nowadays Nigeria) to Angola and Toro (currently, Uganda) in what shall correspond to its first reference for Angola. ACKERY *et al.* (1995), D'ABRERA (2004) and LARSEN (2005) report without details the presence of *B. oxione squalida* Talbot, 1928 from Cameroon, south to Angola and east to Uganda and of *B. oxione oxione* Hewitson, 1866, from Sierra Leone to Nigeria. HECQ (2000a, b) states that *B. oxione squalida* occurs on equatorial and E Africa while the nominate subspecies flies on western Africa - and the photos R and V of both sexes are noted to concern CDR individuals; despite recognizing the existence of the two subspecies and in the absence of details he enhances that “*between the two races, many forms exist*” and that “*tous les intermédiaires existe entre ces deux formes selon leur distribution géographique*”. The subspecies presence in Angola (no precise location) is recently pointed again (ANONYMOUS, 2012, 2018). Our previous reference to *B. oxione* in the country (MENDES *et al.*, 2019) is exclusively based in the existing data, since we had not the chance to observe material.

Group *mardania*

The group *mardania* is a quite homogeneous one and for long it remains the subject of different opinions according to what could be interpreted with base in a classic unpublished figure, that of Jones' Icones plate 70, where the type-males of “*Papilio Mardania*” and of “*Papilio Cocalia*” are represented - see HANCOCK (1982), HOLMES (2001) and LARSEN (2005). The notes of AURIVILLIUS (1928, sub *Euryphene*) and of D'ABRERA (1980) do not contribute to solve the

problem. HANCOCK (1992) states about this group of species that “...it is perhaps one of the most confused groups of African *Nymphalidae* ...”. ACKERY *et al.* (1995) accepts it includes *B. badiana* (2 ssp: *B. badiana badiana* and *B. badiana taveta*), *B. guineensis* (monobasic), *B. mardania* (2 ssp: *B. m. mardania* (= *B. cocalia*) and *B. mardania cocalioides*), *B. orientis* (2 ssp: *B. orientis orientis* and *B. orientis insularis*), *B. senegalensis* (2 ssp: *B. senegalensis senegalensis* and *B. senegalensis katera* (= *B. insularis* = *B. continentalis*) and the monobasic *B. theognis*. After HECQ (2000a, b) there are only three distinct species in the group, namely *B. mardania* (Fabricius, 1793), *B. cocalia* (Fabricius, 1793) and *B. cocalioides* Hecq, 1990, being *B. cocalia* known by several subspecies as it is also considered by D’ABRERA (1980, 2004); later HECQ (2010) recognizes a fourth species in the group (*B. paludicola* Schultz, 1920) he re-describes and accepts as bona species. HANCOCK (1982) based on the wing pattern and on the male genitalia morphology, considers *B. mardania* and *B. orientis* as valid, includes *B. cocalia* in the *B. senegalensis* (Herrich-Schäffer, 1858) synonymy, and agrees with the validity of *B. guineensis* (Felder & Felder, 1867). The modifications in the taxonomy of the *Bebearia* species/subspecies of this group is summarized by HOLMES (2001), who accepts the validity of one monobasic species (*B. mardania*) and of four polymorphic species: *B. cocalioides*, with two subspecies, *B. cocalia* with six, *B. paludicola* with two, and *B.orientis* with five - he notes, further, that the juxta arms are apically spinose in *B. paludicola* and *B. cocalia*, while they are smooth and glabrous or with a few setae only in *B. mardania*, *B. cocalioides* and *B. orientis*. More recently, LARSEN (2005) considers again *B. guineensis* as monotypical and valid, independent from *B. cocalia* and discusses the correctness of the figure of the male genitalia of HOLMES (2001). Identification keys for the species of the complex which validity was, then, accepted are presented by HANCOCK (1992) and by HOLMES (2001).

Bebearia mardania (Fabricius, 1793)

Papilio Satyris mardania Fabricius, 1793. *Ent. Syst.*, 3(1): 249

LT: WEST AFRICA

Note: Neither HANCOCK (1992), nor ACKERY *et al.* (1995), nor HOLMES (2001) nor MENDES *et al.* (2019) report *B. mardania* from Angola despite it was assigned from Luanda (as Loanda) by BUTLER (1871, sub *Euryphene*), considered to be common in the country by DRUCE (1875, sub *Euryphene*), pointed to fly from Ghana (as Gold Coast) to Angola and Uganda by AURIVILLIUS (1928, also sub *Euryphene*) and noted to occur in Angola by FOX (1968, sub *Euphaedra*). We fully agree with HECQ (2002b) who strongly suspects that all references to *B. mardania* for Angola will, actually, concern other species of the group while “*B. cocalia guineensis*” has been also partially recognised by BUTLER (op. cit.) who, though without the support of the male genitalia morphology, points *Papilio cocalia* and *P. mardania* as synonyms - the valves are completely different in the two species and none of the male genitalia studied from Angola agrees with HOLMES (2001: fig. 5a) concerning this species; further, the FW profile is also distinct, and none of the studied specimens have FW acuminate apex as HECQ (2010) enhances to the species, being the R clearly darker than HECQ (2002b) represents. HANCOCK (1992) considers that *B. mardania cocalioides* Hecq, 1988 (currently *B. cocalioides*), extends in Cameroon, Congo, CDR and CAR and includes most of the *B. mardania* previous references, while after HECQ (2002b) it must be considered as a valid species; the male’ valves shape is, indeed, of the same type in the two entities and close also to what is known for *B. orientis* Karsch, suggesting an independent evolutive line inside the “group *mardania*” reinforced by the chaetotaxy of the juxta, only with thin setulae (HOLMES, 2001). D’ABRERA (2004) states again that *B. mardania* flies in Angola and considers the species ranges for Liberia to Ghana and Cameroon, Angola and S Zaire. Taking into consideration the known morphological and geographical data, we believe however that till (if) new data can confirm *B. mardania* real occurrence in Angola, all its previous references to the country must be interpreted as probable misidentifications.

Bebearia senegalensis (Herrich-Schäffer, [1853]) (Figs 5a-5b, 20)

Eurypheme senegalensis Herrich-Schäffer, 1850-1858. *Samml. aussereurop. Schmett.*, **1**(1): 54, pl. [23], figs 95-98

LT: Westafrica, SENEGAL

Material re-examined: GUINEA-BISSAU, Bafatá, Aldeia de Cuor, 1 ♂, 4-II-1946 (CZ-553).

The only specimen reported by BACELAR (1949, as *Euryphaene senegalensis* H. Schäff.), with WL: 28 mm, was revised by BIVAR-DE-SOUSA *et al.* (2008, as a subspecies of *B. cocalia*) and is now studied again. The morphological characteristics fit well with what is currently known for the species: the R pattern fairly agree with the photo of HECQ (2000a) and the male genitalia corresponds to what LARSEN (2005) represents, who justifies it must be faced as a valid species, independent from *B. cocalia* - states that in Guinea-Bissau it flies also in the Bijagós Islands. The occurrence of *B. senegalensis* in Guinea-Bissau is, further, pointed by ACKERY *et al.* (1995) and by HOLMES (2001). The juxta is spinulated, the valves are clearly longer than the ensemble uncus+tegumen, ca. three times longer than wide in their R surface and their distal area shows 5-7 short teeth slightly oriented to the ventral margin. The species has a relatively short range, being known from Senegal, Gambia, Guinea-Bissau, S Guinea and NW Sierra Leone.

Bebearia guineensis (C. Felder & R. Felder, 1867)

Eurypheme guineensis C. Felder & R. Felder, 1867. *Reise. Fregatte Nov. Lep.*, **2**(2) (3): 430

LT: Calabar Vetus, Guinea [NIGERIA]

Note: *B. guineensis* was described from the Old Calabar (currently SE Nigeria), and noticed by ACKERY *et al.* (1995) for Ghana, Nigeria, Cameroon, Gabon, Congo, W CDR and Angola; LARSEN (2005) considers its most obvious characteristics are the short and wide, almost sub-rectangular FWR pre-distal orange band, the complete lack of violaceous shining and the straight margin of this wing - he notes it flies in Nigeria, Cameroun, Congo, W CDR and N Angola. HOLMES (2001, as *B. cocalia guineensis*) reports the very same range, and HANCOCK (1992, who doesn't recognize the validity of *B. cocalia*) considers *B. guineensis* as valid, selects a lectotype ♂ and adds Ghana and Gabon to its range. HECQ (2000 a, b, again as a subspecies of *B. cocalia*) notes that “cette sous-espèce occupe le plus souvent les zones côtières de l'Afrique occidentale et central et s'étend quelques fois vers l'intérieur” and presents photos of the R in both sexes'. D'ABRERA (2004) iconography concerns male (R and V) and female (R) specimens identified as *B. cocalia guineensis* Felder, 1867, he considers however, to fly in Guinea-Bissau only, despite the species was described from SE Nigeria, clearly southwards. We couldn't find any typical representative of this species among the samples obtained in Guinea-Bissau and those from Angola, described afterward as belonging to a new subspecies, have much more acuminate FW; in the complete ignorance of the morphology of the D'ABRERA (*op. cit.*) male valves, we believe that these photos may concern, as a matter of fact, some other subspecies of *B. guineensis* (or of *B. cocalia*) eventually not yet described, close however to the following Angolan endemism.

***Bebearia guineensis inexpectata* Mendes, Bivar & Lopes, ssp. n. (Figs 6a-6d, 21)**

Material examined Holotype 1 ♂, ANGOLA, Cuanza Sul, Novo Redondo (Sumbe), II-1963 (BS-15738). Paratypes: Bengo: Caxito, 1 ♂, III-1971 (BS-15005). Tentativa, 1 ♂, 13-III-1972 (LC-2735, CZ-5322). Ibid, no date, 1 ♂ (LC-2747, CZ-5323). Cuanza Norte, Cassoalala, 1 ♂, 26-VIII-1973 (BS-14623). Nova Oeiras (Zenza do Itombe), 1 ♂, 10-IV-1972 (BS-14966); Ibid, 1 ♀, 17-VI-1973 (BS-14603); Ibid, 1 ♀, 1-IX-1973 (BS-14625); Ibid, 1 ♀, 25-IX-1973 (BS-14624). Cuanza Sul, Novo Redondo (Sumbe), 1 ♀, I-1963 (BS-15744) plus 2 ♂♂, 2 ♀♀ (BS-15735, 15736, 15739, 15743). Ibid, 1 ♀, III-1963 (BS-15745). Non type-specimen. GABON, Ogooué-Maritima, Loango NP, St. Catherine forest, 1 ♀, 27-VIII-2009 (CZ-5762).

Description: WL ♂, 29-34 mm; ♀, 33-37 mm. Antennae maximum length (♀): 16.1 mm. Wings R of male dark brown, the ochreous FW subapical band short and wide, ovoid to sub-rectangular, as it is

typical to the species and the white spot of the subapical band on space 3 small, triangular; no violaceous shining. V not strongly marked and with a quite tenuous pinkish shine. Genitalia different from the remaining taxa though similar, but distinct, from the schematic figure presented by LARSEN (2005); juxta clearly spinulated, the valves approximately as long as the ensemble uncus+tegumen, being each one, at its dorsal surface, 2.5-3 times longer than its maximum width and as long as to somewhat (1/6) shorter than the aedeagus; valves apex with 3-4 (exceptionally only one) apical teeth, slightly ventrally oriented. R of female similar to what is known from most of the species in the group, orange-brown and with the FWR light area white, the spot on space 3 (medio-cubital) small, usually sub-triangular and well separated from the remaining white area; V shine somewhat more pinkish than in the remaining females studied in this contribution.

Discussion: The new subspecies clearly approaches *B. guineensis guineensis* (Felder & Felder, 1867) as considered by HANCOCK (1998), HOLMES (2001) and LARSEN (2005), being their main diagnostic features the longer valves of the Angolan subspecies - again, it must be enhanced, according to this last author that the illustration of the male genitalia of HOLMES (2001) doesn't correspond to the one of *B. guineensis* and he also adverts to the complete absence of R violaceous shining. The species presence in Angola is recently noted (ANONYMOUS, 2012, 2018) though, once more, no details were presented. HANCOCK (1992) assigns *B. guineensis* occurrence in Angola upon 1 ♂ from River Lucala, 228 Km East of Luanda (Cuanza Norte or Malanje province) said to be deposited in the Natural History Museum of Zimbabwe, Bulawayo, a specimen we never saw but that quite probably belongs to the present subspecies; the species is reported again for Angola upon 4 ♂♂, 2 ♀♀ of unknown precise origin by HOLMES (2001, as *B. cocalia guineensis*), who states it ranges from "E Nigeria to Angola, Congo and Zaïre"; concerning the examined material, he reports Sierra Leone, Nigeria, Cameroon, Equatorial Guinea (Bioko, as Fernando Poo), Angola (no precise localities), CDR and Tanzania, but he suspects of the lack of correction of the first one ("... *Sierra Leone highly unlikely*") and of the last one of these data ("... *the Dar-es-Salaam record is also impossible unless by accidental introduction*") - for true, Angola is also marginal to the species range. HECQ (2000a, b, as *B. cocalia guineensis*) notes without details it flies on the coastal areas from W and Central Africa but that sometimes it extends for the inner areas. After BERGER (1981) it is considered as *B. cocalia* together with a number of other forms (currently valid species) and noted as "*pratiquement partout: le vrai mardania est surtout abondant au Mayumbe*" (also part of the newly described subspecies?).

Notes: The only female from Gabon is quite similar to the Angolan specimens, but it is more brownish than orange-brown and the white spot on the inter-cubital space is larger; it is not considered as part of the type-series because it is unique, due to the inexistence of known males in the same area and because it is less well preserved than most of the remaining studied samples. The specimens offered by LC to the CZ were collected by AF.

Etymology: From the Latin *inexpectatus*: not suspected, due to the new subspecies similarity to the nominate one.

Bebearia cocalia cocalia (Fabricius, 1793) (Figs 7a-7b)

Papilio Satyris cocalia Fabricius, 1793. *Ent. Syst.*, **3**(1): 250

LT: "Indiis" [false locality] [West Africa]

Material examined: IVORY COAST, Taï NP, Djiburuti, 22-IV-2000, 1 ♀ (PG-4488).

The studied specimen was obtained in the SW country, close to the RCI border with Liberia. With a WL: 35.5 mm, it fairly agrees with the characteristics of the subspecies, and with the photos presented by HECQ (2002) and by LARSEN (2005), both concerning females proceeding also from RCI; Larsen' figure is, however, more reddish than the studied female, which fully agrees with what Hecq' represented (more brownish). After ACKERY *et al.* (1995) it would be a synonym of *B. mardania mardania*, with a quite distinct light FWR pre-apical band, considered to occur in Sierra Leone, Liberia, RCI and Ghana. The studied specimen, not very well preserved, was accompanied by one hand-written label of *Bebearia mardania* (F.), a reference never published. According to

HOLMES (2001), *B. cocalia* nominate subspecies flies from Guinea to Togo and W Nigeria, but HECQ (2000) says nothing about its range, D'ABRERA (2004) notes it is known from Cameroon to CDR but LARSEN (op. cit.) assigns only Sierra Leone to Ghana.

***Bebearia cocalia ngolae* Mendes, Bivar & Lopes, ssp. n. (Figs 8a-8d, 22)**

Material examined: 1 ♂, Holotype, ANGOLA, Cuanza Sul, Calulo, Fazenda Klein, 1-XII-2015 (BS-35041). Paratypes: Bengo: Tentativa, 1 ♂, 13-III-1972 (NY6650489). Cuanza Norte, Salazar (Dalatando), 2 ♀♀, 25-V-1972 (PC-nn); Ibid, 1 ♂, 25-VI-1972 (PC-1000), det. as *B. mardania*; Ibid, 1 ♂, 25-VII-1972 (PC-nn); Ibid, 1 ♂, 21-XI-1972 (PC-1001); Ibid, 1 ♀, 31-I-1973 (PC-19824); Ibid, 1 ♀, 18-II-1973 (BS-14606); Ibid, 1 ♂, 12-VIII-1974 (PC-140); Ibid, 1 ♂, 18-VIII-1974 (PC-157); Ibid, 1 ♂, 23-I-1975 (PC-nn). Cuanza Sul, Cabuta, 1 ♂, 29-XI-2015 (n. 49) (BS-35040). Calulo, Aldeia Catembo, 1 ♂, 5-XI-2014 (BS-33505). Calulo, Alto Ventura, Fazenda Monte Café, (n. 49), 2 ♂♂, 1-XII-2017 (BS-36692, 36693). Calulo, Fazenda Klein, 1 ♂, 1 ♀, 1-XII-2015 (BS-35042, 35043); Ibid, 1 ♀, 8-XII-2017 (n. 44) (BS-36694) plus 1 ♂, 1 ♀ (BS-36690, 36691). Novo Redondo (Sumbe), 4 ♂♂, I-1963 (BS-15735, 15737, 15740, 15742). Uige, Fazenda S. José, Nova Caipemba, 1 ♂, XII-1975 (BS-15741).

Description: WL ♂, 31,5-35,5 mm; ♀, 36,5-39 mm. Antenna maximum length (both sexes): 17.7 mm. R of male dark brown with strong violaceous shining, the FWR light sub-apical band yellow, sub-rectangular but not so thin than in *B. guineensis*. V strongly marked and with a tenuous light greenish shine. Juxta with short and robust spinules. Valve 3-4 times longer at its dorsal surface than wide and much longer than the ensemble uncus+tegumen, its apex with 1-2 main thin spines that may be bifid or trifid and that are not or almost not turned to the ventral surface, the aedeagus slightly longer than its dorsal margin. R of female brownish-orange, the FWR with the white pre-apical band not much different from that of the male, the V well marked and also with a greenish reflection.

Discussion: The present subspecies shall correspond at least partially to what HECQ (2000b) considered to be *B. cocalia guineensis*, once he states that the dark brown D “*éventuellement à reflets plus ou moins pourprés, assez concolor*”, opposite to LARSEN (2005), who enhanced the lack of purple shining in *B. guineensis*. HECQ (2000b) considers so, that the violaceous tint could be present or absent in the same species which would be, after him, *B. cocalia guineensis*, even if with distinct FWR ochreous sub-apical band. However, the elongated valves, much longer than the ensemble uncus+tegumen and clearly longer than their own width, allow consider that the new taxon belongs to *B. cocalia* and not to *B. senegalensis* - also identification keys proposed by HOLMES (2001, as *B. cocalia guineensis*). HANCOCK (1998, as *B. guineensis*) doesn't consider *B. cocalia* as valid, rather a synonym of *B. mardania*, to what we completely disagree, but judiciously adverts for the fact that both were erroneously considered as originally described from “Indiis” (India).

Notes: All the PC specimens were labelled by him (though never published) as *B. mardania*.

Etymology: From N'Gola, one of the former names (Kimbundo origin) for the country currently named Angola.

Bebearia cocalia katera (van Someren, 1939)

Euryphene mardania katera van Someren, 1939. *J. E. Afr. Uganda nat. Hist. Soc.*, **14**(65): 52, pl. 14, figs 3-4, pl. 15, figs 3-4

LT: Katera, CONGO

Note: *Bebearia cocalia katera* is misidentified as a faunistic novelty for Angola by MENDES *et al.* (2019), upon specimens that belong, of a matter of fact, to the following taxon; its occurrence in the country was, further, previously reported (ANONYMOUS, 2012, 2018) eventually also upon specimens of this same taxon. *B. cocalia katera* (van Someren, 1939) is noticed by HECQ (2000a) only as with the sub-apical medium-wide band orange in the male and with the ground colour lighter than *B. cocalia continentalis* Heqc, 1988, and pointed to range from “*Sud-est Zaire, Rwanda, Burundi, Uganda, Tanzanie-ouest*”; he notes, further, “*dans ce dernier pays, cette forme assure un passage*

insensible vers des formes plus orientales” (“*formes*” means subspecies? species? morphs?); the respective figures are assigned as “*planche 6, fig. 1,2*” and the photographed specimens are noted as from Burundi. In what *B. cocalia continentalis* is concerned (HECQ, 2000a), it is compared with *B. cocalia guineensis* (“*Forme proche de la précédent mais...*”) but not with *B. cocalia katera*, and the photos presented by HECQ (2000b), are assigned as “*planche 5, fig. 5, 6*” but they show, indeed, 1 ♂, 1 ♀ (both R) of *Bebearia cocalia cocalia* (Fabricius, 1793) from RCI, being the subspecies pointed (HECQ, 2000a) as ranging from “*Nigeria (et peut-être plus au Nord encore) au Congo-Kin. Central*”, despite holotype and paratype were assigned, both, as collected in Beni, in the Kivu, NE CDR. The male genitalia of *B. cocalia katera* from Tanzania is represented by KIELLAND (1990) and recently the species is considered to enter the synonymy of *B. cocalia continentalis* being presented photos of the holotype and paratype preserved in the Tervuren Museum, Belgium (ANONYMOUS, 2019). However, LARSEN (2005, as *B. continentalis continentalis*) comments that it is “*very close to the range of ssp. katera van Someren, 1939, which has rather different genitalia from Nigerian ssp. continentalis (sufficiently so almost to merit specific status - see illustrations in Holmes (2000))*”. The real independence of *B. cocalia continentalis* Hecq, 1988 relatively to *B. cocalia katera* (van Someren, 1939, as a subspecies of *Euryphene mardania*) or their synonymy as considered by ACKERY *et al.* (1995) remain so, quite dubious and we believe that their reference for Angola results of the misidentification of one of the Angolan endemics described ahead.

***Bebearia paludicola meridionalis* Mendes, Bivar & Lopes, ssp. n. (Figs 9a-9d, 23)**

Material examined: 1 ♂ Holotype, ANGOLA, Cuanza Norte: Salazar (Dalatando), 10-IV-1972 (BS-14605). Paratypes: Cuanza Norte: Salazar (Dalatando), 1 ♂, 14-III-1975 (PC-nn). Cuanza Sul, Calulo, Alto Ventura, Fazenda Monte Café, (n. 44), 1 ♀, 8-XII-2017 (BS-36695).

Description: WL: ♂, 34.5 mm, ♀, 41.5 mm making it one of the largest among the females known in the “group *mardania*”. Antennae maximum length: 21.5 mm. FW not acuminate and its outer margin straight in both sexes; HW angled, though less clearly in the male than in the female. R of male dark brown and with violaceous shine, the pre-distal light band ochreous, angled on space 4 (between M₂ and M₃), being the two parts of the spot on this space more or less identical and the one on space 3 (medio-cubital) quite reduced; V with not much vivid pinkish or violaceous shining. Juxta clearly spinose. Valves robust, slightly longer than the ensemble uncus+tegumen, ca. 2.5 times longer at the dorsal surface than its maximum width; apically there is one acute tooth which may or may not be accompanied by a dorsal rudiment of a second one; aedeagus as long as the valve’ dorsal margin. R of female light brownish, the pre-distal light band white and not much different from that of the male, except for the spot on space 3 which is large and sub-quadrangular; FWR black area of the end of the cell very developed, extended to the tornus; pinkish shine of the V evident.

Discussion: After LARSEN (2005) *B. paludicola* Holmes, 2001 - treated as a subspecies of *B. cocalia* by HECQ (2000a, b) - is known for Sierra Leone, RCI, Ghana, E Nigeria, Cameroon, Congo, CAR and W RCA, and the Dahomey Gap would isolate the ranges of the two known subspecies, the nominate one east of the Gap and *B. paludicola blandi* from Ghana to Sierra Leone. *B. paludicola meridionalis* ssp. n. is more similar to the nominate subspecies due to the development of the FWR light subapical band, but differs from both in the male relatively to the shape of the valve’ apex and of the aedeagus, and in the female because of the development of the FWR black area and of the V pinkish shine.

Etymology: From the Latin, *meridionalis*: the south, once it concerns the southernmost known subspecies of *B. paludicola*.

Bebearia orientis malawiensis Holmes, 2011 (Figs 10a-10d, 24)

Bebearia orientis malawiensis Holmes, 2011. *Trop. Zool.*, **14**(1): 56

LT: MALAWI

Material examined: MOZAMBIQUE, Sofala, Mata do Nhangau, 3 ♂♂, 1 ♀, XI-1968 (BS-15746-

15748, 15753); Ibid, 1 ♀, XII-1968 (BS-15754); Ibid, 4 ♂♂, 4 ♀♀, I-1969 (BS-15749-15752, 15755-15758).

WL: ♂, 29.0-31.2 mm; ♀, 35.2-36.5 mm. Antenna: maximum of 16.7 mm, longer than half the costa, like in the following subspecies. The HWR marginal line is not so irregular than it is in the next subspecies, what is conspicuous in both sexes. The male genitalia was never represented, though it is noticed as similar to the case of the nominate subspecies (HOLMES, 2001): juxta smooth, not spinulated (only a few thin setae exist), the valves much longer than the ensemble uncus+tegumen, thin and elongate with the apex ventrally bent (more than in the next new subspecies - cf. Figs 24 and 25). The apical dark area of the female FWR is darker than the remaining wing surface but not blackish and the light pre-apical band is white.

DICKSON & KROON (1978) assign the species (as *B. mardania orientis*) by the first time to the country - photos of specimens from the Maronga Forest are presented and material, considered to be co-subspecific, is pointed from Amatongas and Dondo but neither detailed description, nor the morphology of the male genitalia are reported. VAN SON (1979) points again *B. orientis* (no subspecies considered) from Maronga and presents photos of the male R, male V and female R (that of female V concerns a specimen from Rhodesia - currently Zimbabwe) and KIELLAND (1990) notes it occurs also in Mozambique though no precise location is reported. HOLMES (2001) when accepting *B. orientis* as a valid species, points *B. orientis malawiensis* to the country as “*Moçambique: 1 ♂, 2 ♀♀ no locality, 1 ♂, 1 ♀ Zambizi*”. Previously, HANCOCK (1992) considers already *B. orientis* as a good species but integrating only two subspecies, the nominate one, from S Somalia, E Kenya, E Tanzania, Mozambique (he reported Dondo Forest, Inhaminga area, Beira, currently Sofala Province), S Malawi, E Zambia and N and E Zimbabwe, and *B. orientis insularis*, the Pemba endemic. The central Kenyan and the Kenya-Tanzania border subspecies were considered, respectively, as *B. badiana dealbata* and *B. badiana taveta*.

***Bebearia orientis guerreiroyi* Mendes, Bivar & Lopes, ssp. n. (Figs 11a-11b, 25)**

Material examined: 1 ♂, Holotype, MOZAMBIQUE, Nampula, Nacala, 16-VI-1992 (PG-4490). Paratypes: Same data as for the holotype, 4 ♂♂ (PG-4489, PG-4491-4493).

Description: Only the male sex is known. WL: 29.3-31.6 mm. Antennae: maximum of 16.9 mm, exceeding half of the FW costa, the antenna wing ratio 0.54-0.57. R is light-brown, being its dark-brown markings quite conspicuous. FW outer margin straight to almost indistinctly concave, the subapical lighter band somewhat enlarged. V beige with a very light pinkish tint, the dark brown markings well visible on all the wings, the dark-brown band prolonged from the FW apex to the hindwing HW tornus quite conspicuous. Genitalia of male typical for the *B. orientis* group as enhanced by HOLMES (2001), and quite distinct from what is known from *B. cocalia*: the juxta is smooth (only a few cilia occur on the apical area), the valves are thin and elongate, ca. 3.5-4 times longer than their maximum width, being clearly curved ventrally, and their apex is ventrally bent. Despite the same general design of the remaining subspecies of *B. orientis*, in *B. orientis guerreiroyi* ssp. n. the valve apex is straightened and acute, not slightly dilated; further, the aedeagus is apically less hooked and with distinct proportions than in the nominate subspecies (cf., figs 5 c, d, e of HOLMES, 2001) said to be very similar to the case of *B. orientis malawiensis*.

Discussion: The five taxa pointed ahead are currently considered to be subspecies of *B. orientis* (recognized as a valid species by LARSEN, 2005, considered a subspecies of *B. cocalia* by HECQ (2000a, b) despite the very distinct genitalia of the males): a. *B. orientis orientis* (Karsch, 1895) from the coastal S Somalia to E Tanzania (Zanzibar Island included) - HOLMES (2001) notes that its reference for Uganda must be due to a labelling error; b. *B. orientis dealbata* (Carcasson, 1958) from inner Kenya; c. *B. orientis taveta* Clifton, 1980, from the Kenya/Tanzania border, SE of the Kilimanjaro; d. *B. orientis insularis* Kielland, 1985, endemic from the Pemba Island; and e. the just reported *B. orientis malawiensis* Holmes, 2011, known from S Malawi, Mozambique and Zimbabwe.

No females of *B. orientis guerreiroyi* sp. n. were collected, but the males are distinguishable from

all the listed subspecies because of the valves' apex morphology (KIELLAND, 1985, HOLMES, 2001). They are further, different from *B. orientis dealbata* and from *B. orientis taveta* due to the complete absence of violet reflexion, by the clear ochreous FW pre-apical band and by the more contrasted V. In the larger *B. orientis insularis*, considered to be close to the nominate subspecies (KIELLAND, 1985), R is paler than in *B. orientis guerrei* sp. n., the HWR marginal dark brown line is distinct and the R maculation is different, less contrasted against the base colour and almost absent for the HW cell; further, the V dark-brown band that crosses the wings from the FW apex to the HW tornus is visibly less contrasted. The two most similar subspecies are *B. orientis orientis* and *B. orientis malawiensis* though in both cases the FWR ochreous pre-apical band is narrower, the HWR marginal dark brown line is distinct, the V brown markings are darker and the male genitalia is different, since the valves apex is somewhat dilated apically, not straightened as represented by HOLMES (2001); the valves are more regularly curved ventrally and more angled apically and the aedeagus is distinct. Shall the Low Zambezi river valley represent a geographical barrier between *B. orientis malawiensis* and *B. orientis guerrei*?

Notes: Each type-specimen was accompanied by a PG' handwritten label of *B. senegalensis* Herrich-Schäffer which was corrected (a further handwritten label) by SV in 2016 for *Bebearia orientis malawiensis* Holmes, 2001 - none among these data was ever published.

Etymology: The subspecies is named after the collector of the studied sample, the late Captain Pessoa Guerreiro.

Group *sophus*

Bebearia sophus phreone (Feisthamel, 1850) (Figs 12a-12d, 26)

Euryphene phreone Feisthamel, 1850. *Ann. Soc. Ent. Fr.*, (2)8: 253

LT: Cazamance, SENEGAL

Material examined: GUINEA-BISSAU, Quinara, Bacarconte (Canconté), 1 ♀, 1-XII-2002 (CZ-5184). Buba, 1 ♂, 15-II-2001, at night (CZ-5067). Tombali: Cambeque, 1 ♂, 10-VII-2009 (BS-29025). The following samples, reported by BACELAR (1949), MENDES *et al.* (2008) and BIVAR-DE-SOUSA *et al.* (2016), were re-examined: Bafatá, Gafati, woodland, 1 ♀, 6-II-2013 (CZ-6118). Xitole, 1 ♀, 10-II-1946 (CZ-558). Quinara, Buba, 1 ♀, 17-II-1946 (CZ-564). Lagoa de Cufada, 1 ♂, 1-VII-1995 (BS-nn). Tombali, Mampatá Forea, 1 ♂, no date (BS-nn). Pataque, Boé, 1 ♀, 1-II-2013 (CZ-5899).

The two females collected the 1946 (CZ-558, CZ-564) integrate BACELAR (1949) and were correctly identified as *Euryphene sophus* ab. *phreone*, today considered at the subspecies level, the one that ACKERY *et al.* (1995) points to occur in Senegal to Guinea-Bissau and that LARSEN (2005) confirms to occur in this last country; she misidentified however all the studied males as belonging to *E. sophus* as they belong, as a matter of fact, to *B. ultima* as it was enhanced by BIVAR-DE-SOUSA *et al.* (2016, as *B. phantasina ultima*) and it will be reported ahead. Juxta smooth with thin apical setulae only. Male valves robust, more than three times longer in their dorsal surface than wide, ventrally bent before their median area, exceeding the limit of the uncus (longer than the ensemble uncus+tegumen), apically round and smooth, the ventral outer scales not much abundant and present on their basal area only. Uncus longer than the tegumen. The studied females show whitish pre-apical band, opposite to what HECQ (2000) represented to the subspecies, a feature that LARSEN (2005) enhances to be variable in one same population, and the R light area is bluish.

Bebearia sophus angolensis Mendes, Bivar & Lopes, ssp. n. (Figs 13a-13d, 27)

Material examined: 1 ♂, Holotype, ANGOLA, Cuanza Norte, Salazar, 6-I-1975 (PC-nn). Paratypes: ANGOLA, Cuanza Norte, Salazar, 1 ♂, III-1973 (AF-NY681001, in the NHMUP). Uige, Inga, 1 ♀, IX-1964 (BS-15791).

Description: WL: ♂, 29.6 mm, ♀, 30.1 mm. Antennae of male lost, the only one complete of the

female 12.4 mm and attaining the pre-apical light band. FW acuminate, more clearly in the male, its outer margin concave in both sexes; HW angled, though less clearly in the female. R of male brown and with darker less contrasting maculation, the pre-distal band yellow, relatively narrow, but quite well defined; V light-brown, its costal-subapical area greenish, the apical area with white scales, the FW line slightly arched and lighter, the pre-distal band poorly visible. Juxta small, with thin apical setulae only. Male valves robust, ventrally bent before their median area, apically rounded and almost attaining the limit of the uncus, the scales abundant, lacking on their distal area only. Tegumen longer than the uncus. Aedeagus about as long as the valve' dorsal margin. R of female with the FW distal half dark-brown, the pre-distal band yellow and wider than that of the male, the inner half as well as the whole HW greenish; V similar to that of the male but with all the costal-apical area lighter, the light pre-apical band well visible and the FW line white and more conspicuous.

Discussion: In the holotype, much darker than that of the males of the previous subspecies and with more acute FW apex, the pre-apical band of the FWR is quite well defined, though not especially wide and contrastingly yellow against the brown ground-colour; its discal dark-brown round spots are clearly less visible since they are much contrasted against the ground-colour; and the V is much lighter and with a greenish gray tint, especially in the HW, being the ocellar spots much more clearly visible; the genitalia differs from that of *E. sophus phreone* being the valves somewhat shorter, not attaining the level of the uncus apex, and with abundant outer scales and the proportional length of uncus and tegumen are distinct. The paratype female shows the FW more falcate than what is known in the previous subspecies, the light yellow FWR pre-apical area is narrower and its dark markings are obsolete; further, opposite to the condition in *B. sophus phreone*, the light colour mainly in the HWR is greenish, not bluish.

Notes: The first reference to the presence of *Bebearia sophus* in Angola is that of DRUCE (1875, sub *Euryphura*) based on material collected by J. J. Monteiro; he is followed by AURIVILLIUS (1928, as *Euriphene sophus*), BACELAR (1958, as *Euryphene sophus sophus*) and FOX (1968, as *Euphaedra sophus*) and no precise Angolan location was ever reported. The only specimen assigned for "Angola" without details by BACELAR (op. cit. - unsexed, undated, not seen) was reported to be deposited in the SFA: obtained by Eng. Azevedo e Silva who worked especially in Cabinda it almost certainly belongs to the present subspecies. ACKERY *et al.* (1995) point the nominate subspecies to range from Senegal to Kenya, Uganda and Tanzania and *B. sophus aruunda* for the CDR only (Mayumbe, Ubangi, Mongala, Uele, North Kivu, Tchopo, Equateur, Cataractes, Kwilu, Kasai, Sankuru, Lomami, Lualaba and Tanganyika, certainly based in BERGER, 1981 - shall they all be part of one only subspecies?) but the previous data relatives to the species in Angola were overlooked. LARSEN (2005) notes that the *B. sophus* easternmost populations were described as subspecies as *E. sophus audeoudi* Riley, 1936 from Uganda and W Kenya, *B. sophus ochreata* Carcasson, 1961, from the Lake Tanganyika area, and *B. sophus monforti* Hecq, 1990, from Rwanda (though he sustains that "all these, surely cannot be valid") and that *B. sophus aruunda* Overlaet, 1955, occurs in the Shaba only; this subspecies is considered by BERGER (1981) as a form (?) and paratypes from the Upemba National Park (Shaba) - quite far from the Angolan border though "the closest" to its easternmost border - were photographed. The occurrence of *B. sophus* in Angola (again, no subspecies considered, no precise area - not even the province assigned) is also recently pointed (ANONYMOUS, 2012, 2018, MENDES *et al.*, 2019).

Etymology: The new subspecies is named according to its known range.

Group *plistonax*

Bebearia plistonax (Hewitson, 1874) (Figs 14a-14d, 28)

Euryphene plistonax Hewitson, 1874. *Ill. Exot. Butts*, [3]: [51], pl. [26], figs 38-39

LT: Monteiro, ANGOLA

Material examined: ANGOLA, Moxico, Marco 25, 1 ♂, III-1965 (BS-15790). ANGOLA, Province ?:

No precise location, 1 ♀, no date (CZ-nn) with a manuscript label of *Euriphene mardania* F. (accidental change of labels?, calligraphy not recognizable).

The species was described from “Angola (West Africa)” by HEWITSON (1874, sub *Euryphura*) from where, we believe, no precise location was ever reported till now. AURIVILLIUS (1928) notes it ranges from Nigeria to Angola, and ACKERY *et al.* (1995) and D’ABRERA (2004) add Zaire and Uganda. After BERGER (1981) the species occurs from “Spanish Guinea” (currently Equatorial Guinea - where its presence is not recognized by VIEJO, 1990 nor by OLANO & MARCOS, 1993) and Nigeria to Zaire and Angola, being in the CDR known from Mongala, Uele, Kivu-Nord, Equateur, Kasai, Sankuru and Lualaba. Recently, the existence of the species in Angola is mapped by SÁFIÁN *et al.* (2016) who show its occurrence in Cabinda, the northern areas of Uige and Malanje, the Lunda Norte and Lunda Sul and the northern part of the Moxico, though none precise location was noticed; the whole known range of the species is shown to include also most of the CDR, NW Zambia, Rwanda, Burundi, and neighbouring areas of Tanzania and Uganda, as well as the southern RCA, Congo, Gabon, Equatorial Guinea, Cameroon and close SE Nigeria.

B. plistonax is recently pointed again to Angola (ANONYMOUS, 2012, 2018), and only one subspecies remains described though after D’ABRERA (2004) the easternmost populations will correspond to an “undescribed race”. However, in the studied specimens and mainly in the male: *a.* the white FW pre-apical band is visibly more reduced, especially in what its V is concerned, when compared with the D’ABRERA (op. cit.) photo (as usual for this author, no origin is registered), and *b.* the HWV is distinct, without trace of greyish scales (quite evident in this author’s photo). An obscured marginal HWR band is represented by AURIVILLIUS (1928, pl. 40c), who shows, further, a clearly yellow FWR subapical light band - though this band is noted as usually white - and described a greyish verso (“*le dessous est gris brunâtre*” - AURIVILLIUS, op.cit.: 177). If compared with the Shaba material reported by HECQ (2000) – only the photo of 1? from Katanga is presented - the differences relatives to the male from Moxico are much more attenuated, despite the bigger development of the FW pre-apical white spots, especially in the V. Relatively to the figures of BERGER (1981 - R and V of a Zaire’s male of non-reported origin) the HWR margin is dark brown and the V is darker than in the Angolan specimen, more contrasted and not uniformly brown. The SÁFIÁN *et al.* (2016) R and V photos of 1 ♂ from Tanzania (Bukoba, in the W border of the Victoria Lake) and of 1 ♀ from Nigeria (Ngel Nyaki) reveal also FW subapical white spots more developed than in the Angolan studied specimens. The Moxico’ male genitalia is robust, with the valves longer than the uncus, narrowed on the basal part and almost devoid of proximal scales - though a few ones are visible; compared with the case of the Cameroon’s male genitalia presented by SÁFIÁN *et al.* (2016), the valves are in the Angolan specimen much longer than the uncus, more gradually narrowed to the base and apically more smooth. Despite most of the photographed specimens completely lack detailed information on their geographical origin, they obviously raise the problem of the species real monotypy.

Group *elpenice*

Bebearia hassoni Hecq, 1998

Bebearia hassoni Hecq, 1998. *Ent. Africana*, 3(2): 39

LT: Cuanza Sul, ANGOLA

Material examined: None specimen was seen.

The species was described from the Cuanza Sul and remains known by its holotype ♀ only, deposited in the Belgian Musée Royal de l’Afrique Centrale in Tervuren (HECQ, 1998, 2000b, ANONYMOUS, 2019); it seems typical from humid forest - primary or secondary wet forest, gallery and riverine forest or forest edge (MENDES *et al.*, 2019). With a wingspan of 65 mm, clearly concave FW margin, rounded FW apex and a large FWR white band, it is also recognizable by its V pattern, as the HW irregular oblique brown band extends to the middle of its inner margin (not to close its tornus), since the subapical white band is clearly contrasted and because the dark annulated marks are less numerous and different.

Subgenus *Bebearia* Hemming, 1960Group *phantasia*

Bebearia phantasia cf. *concolor* Hecq, 1988

Bebearia phantasia concolor Hecq, 1988. *Lambillionea*, **88**: 84, pl. 3, fig. 3-4

LT: Lolodorf, CAMEROON

Material examined: None specimen was seen.

Note: The species is registered from Angola without details by DRUCE (1875, as *Euryphura phantasia*) as pointed by MENDES *et al.* (2019). The known geographical distribution of the several *B. phantasia* subspecies reported by ACKERY *et al.* (1995), strongly suggest that DRUCE' (op. cit.) Angolan sample, if correctly identified and if not wrongly labelled, will belong to the present subspecies, despite Angola is not considered in the range of none of them - indeed *B. phantasia concolor* is reported (HECQ, 2000) to distribute in Cameroon, Congo (Etuombi) - border with Gabon - and lower CDR.

Bebearia ultima Hecq, 1990 (Figs 16a-16d, 29)

Bebearia ultima Hecq, 1990. *Revue Ent. Gen.*, **1**: 38

LT: Basse Casmance, GAMBIA

Material examined: No new material was studied, but the following samples, previously reported by BACELAR (1949), BIVAR-DE-SOUSA & PASSOS-DE-CARVALHO (1987, as *B. p. phantasiella*) and BIVAR-DE-SOUSA *et al.* (2016), were re-examined: GUINEA-BISSAU, Bafatá, Dulombi, woodland, 1 ♀, 28-II-2013 (CZ-6119). Xitole, 1 ♂, 11-II-1946 (CZ-559). Biombo, Granja, Ilha de Bissau, 1 ♂, 14-III-1945 (CZ-504). Quinara, Buba, 2 ♂♂, 17-II-1946 (CZ-564); Ibid, 1 ♀, 2-III-1948 (CZ-578). Buba Tombo, 1 ♂, 19-VII-2009 (BS-29022). Cantanha, 1 ♂, 9-VII-2009 (BS-29023). Tombali: Mato de Lauchande, 1 ♀, 9-12-VII-2009 (BS-29021); Mato de Cambeque, 2 ♂♂, 10-VII-2009 (BS-29024, 29025).

The first note on the real presence of the species in Guinea-Bissau is due to BACELAR (1949, as *Euryphaene phantasina* Staudinger) with base on 1 ♀ only from Buba (CZ-578); however, all the males she noticed (CZ-504, 559, 564) were misidentified as *Euryphaene sophus* (F.), as enhanced by BIVAR-DE-SOUSA *et al.* (2016, as *B. phantasina ultima*); one further male from Buba (CZ-578) was not part of the material listed by BACELAR (op. cit.) and is here noticed by the first time. The species is not accepted by ACKERY *et al.* (1995) who consider *phantasina* as a subspecies of *B. phantasia*. The male valves are almost as long as the uncus, slightly ventrally bent in the median area and are, at least apparently, devoid of scales.

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(PTDC/AFR/117785/2010) assessing the environmental and socio-economic impacts of cashew expansion in West Africa; and Dr. João Guilherme, on behalf of the Chimbo Foundation in cooperation with local NGO Daridibó - these two last series allowed a better knowledge of the *Bebearia* present in this country.

We remember, further, the late Dr. Eduardo Augusto Luna de Carvalho, who long ago deposited in the CZ his small reference collection of Papilionoidea obtained in Angola while technician in the Dundo Museum and the also deceased Lieutenant António Francisco Figueira who offered to BS a few samples he obtained in the northern Angola - we were kindly received several times at their houses, where we were free to examine their vast collections; among the material collected by AF it must be enhanced the presence of the paratype female of one new subspecies (previously in the BS collection, now in the MUHNAC) as well as of a paratype of the same taxon, now deposited in the NHMUP.

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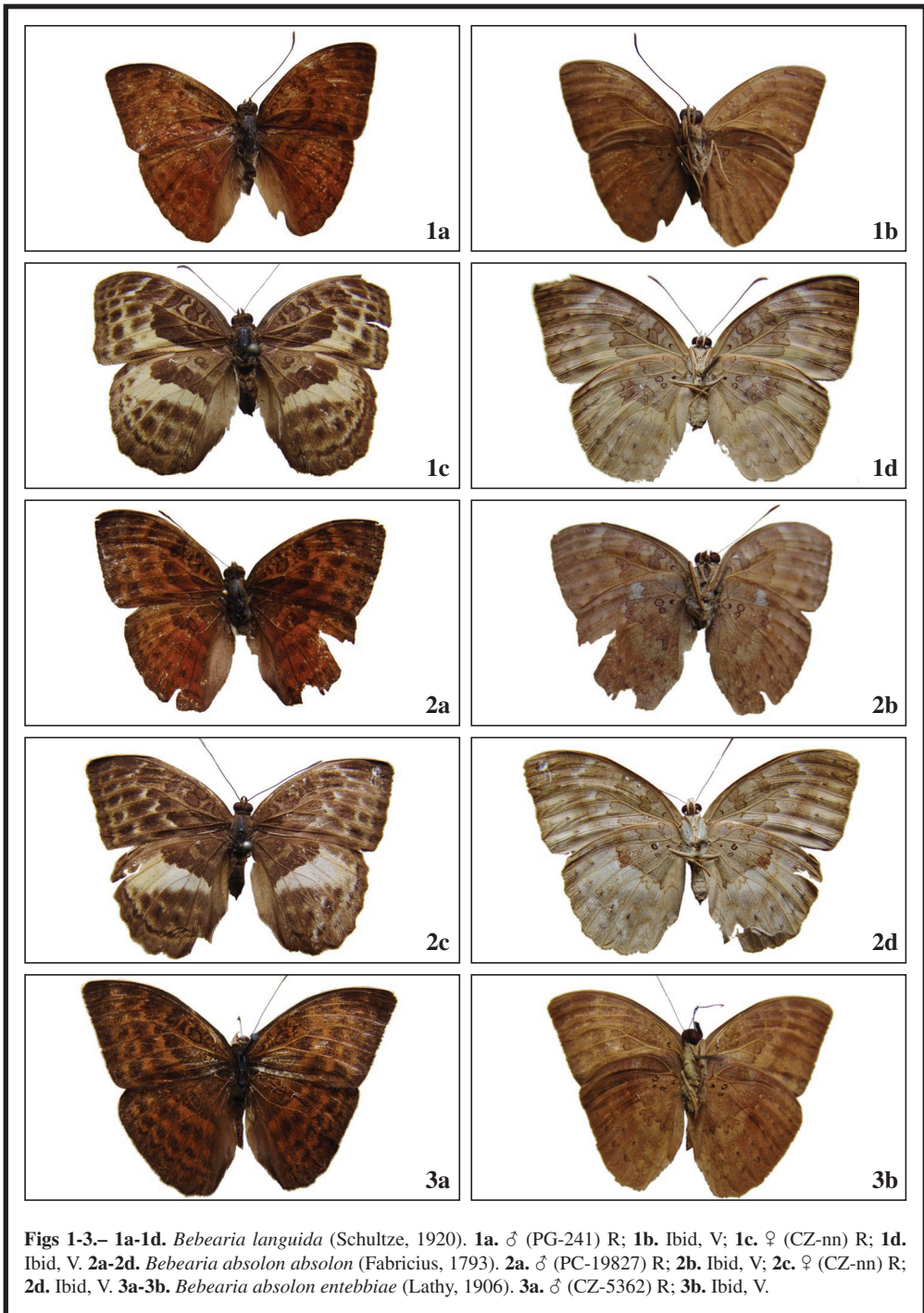
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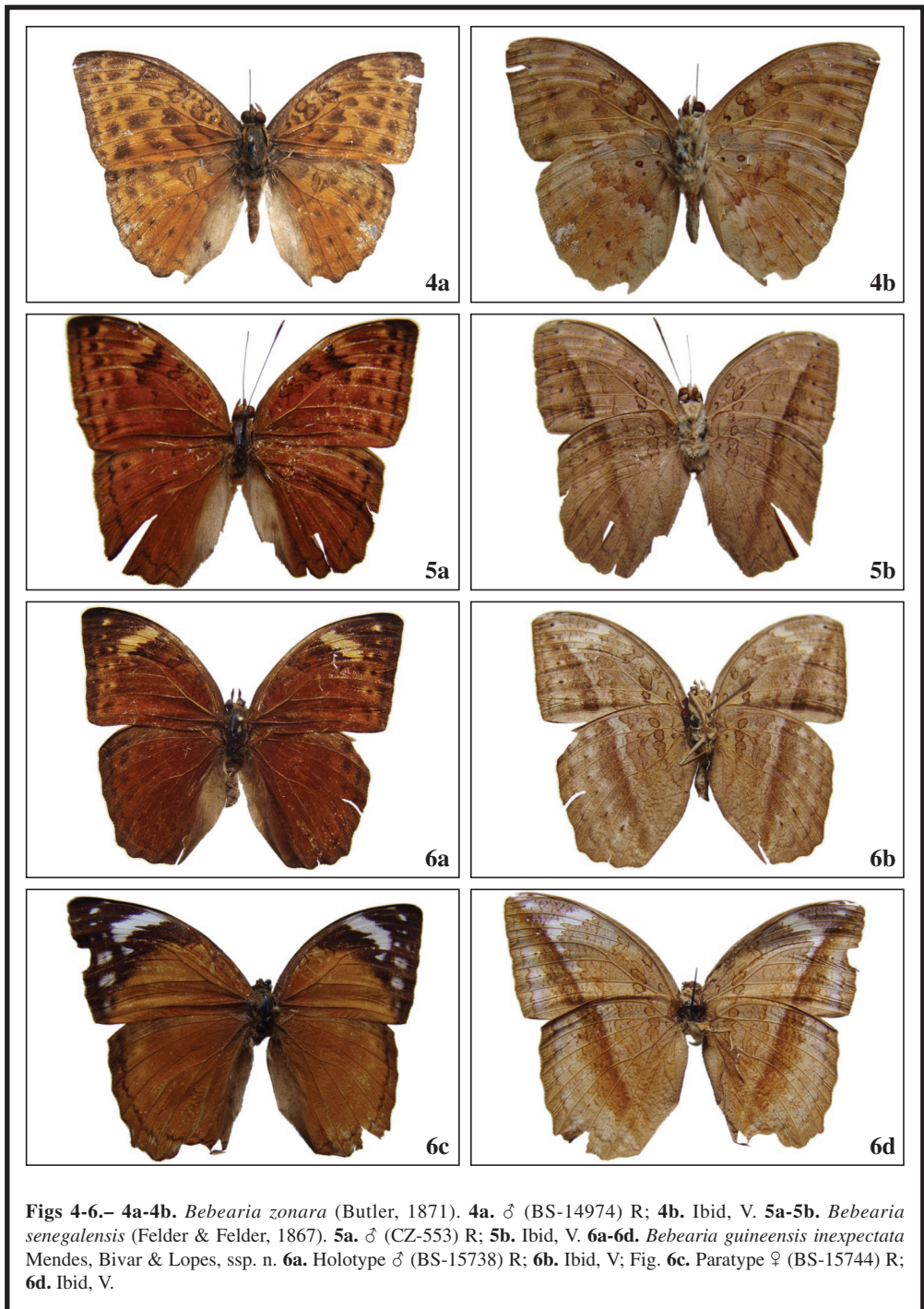
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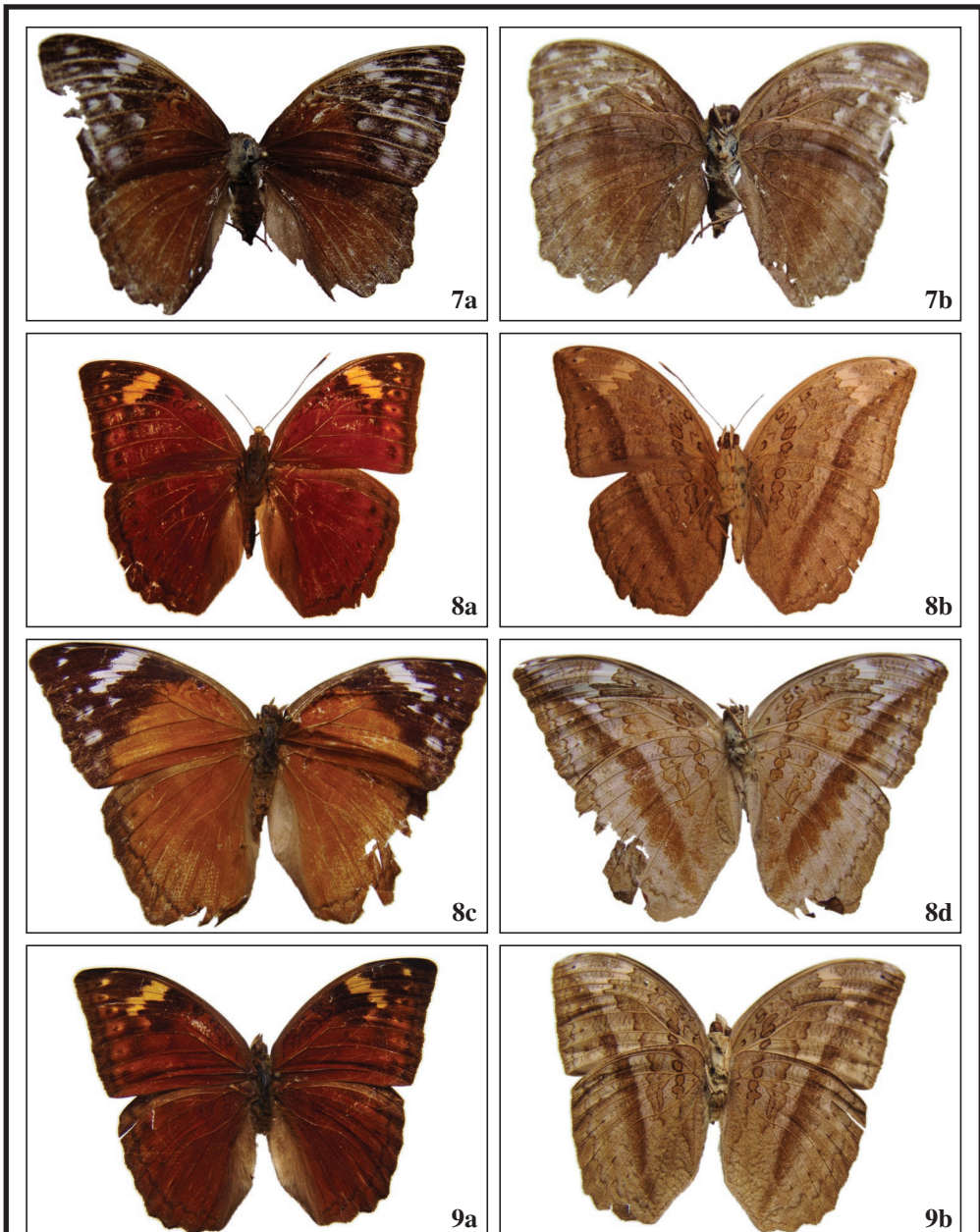
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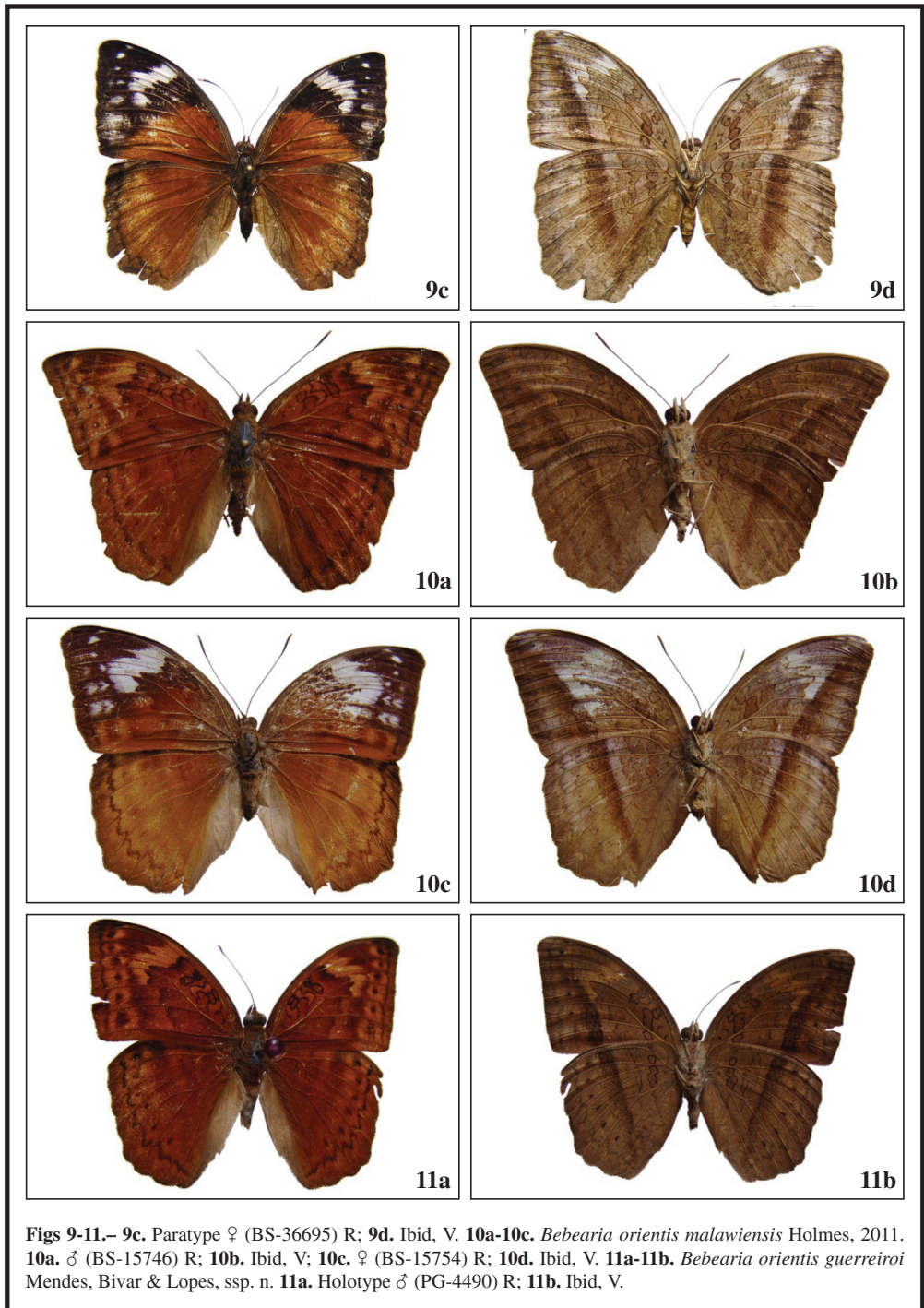
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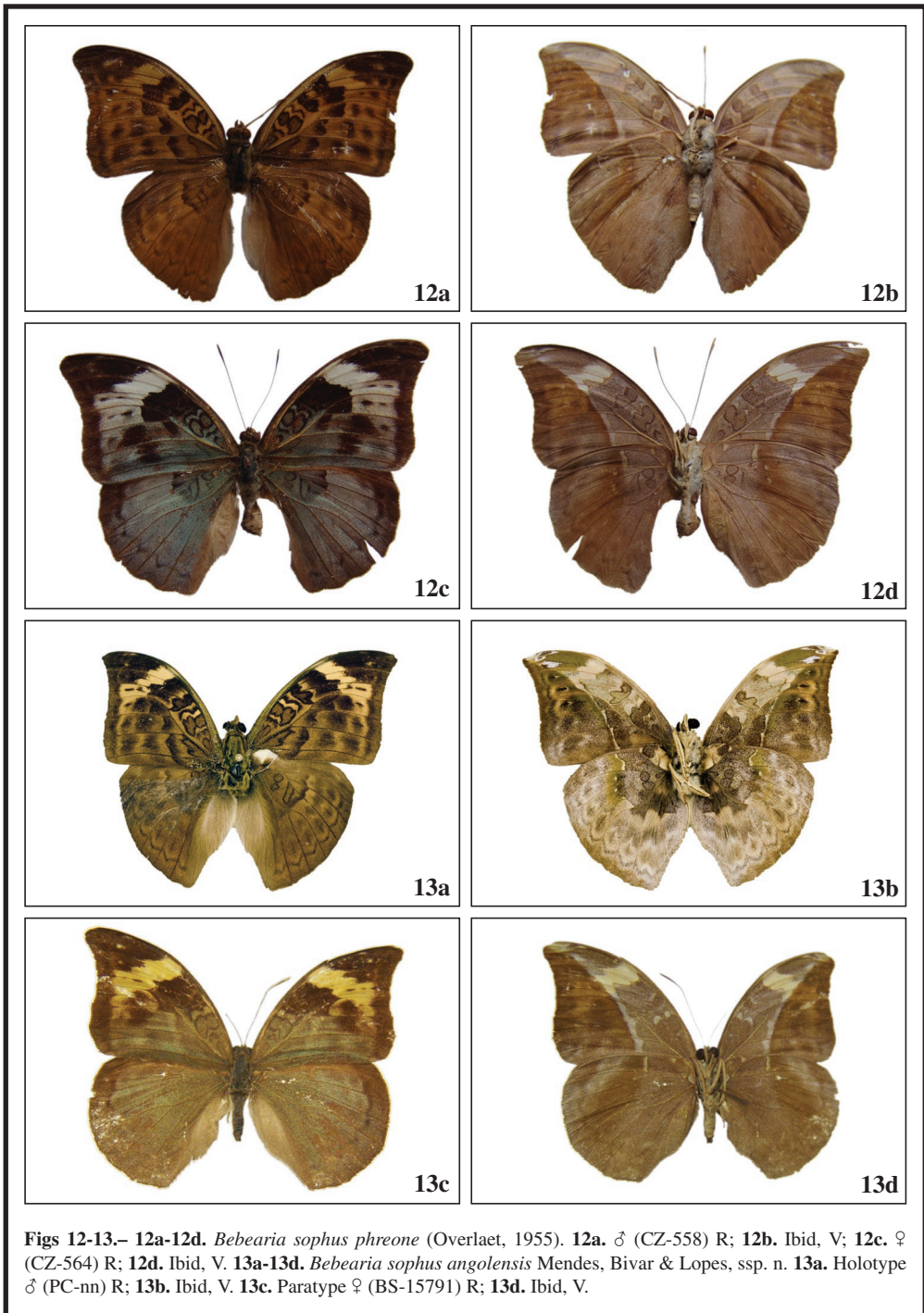






Figs 7-9.— **7a-7b.** *Bebearia cocalia cocalia* (Fabricius, 1793). **7a.** ♀ (PG-4488) R; **7b.** Ibid, V. **8a-8d.** *Bebearia cocalia ngolae* ssp. n. **8a.** Holotype ♂ (BS-35041) R; **8b.** Ibid, V; **8c.** Paratype ♀ (BS-36694) R; **8d.** Ibid, V. **9a-9d.** *Bebearia paludicola meridionalis* Mendes, Bivar & Lopes, ssp. n. **9a.** Holotype ♂ (BS-14605) R; **9b.** Ibid, V.





Figs 12-13.— **12a-12d.** *Bebearia sophus phreone* (Overlaet, 1955). **12a.** ♂ (CZ-558) R; **12b.** Ibid, V; **12c.** ♀ (CZ-564) R; **12d.** Ibid, V. **13a-13d.** *Bebearia sophus angolensis* Mendes, Bivar & Lopes, ssp. n. **13a.** Holotype ♂ (PC-nn) R; **13b.** Ibid, V. **13c.** Paratype ♀ (BS-15791) R; **13d.** Ibid, V.

